G-ICT12 GDAAC - ASTER GDS Interface Confidence Test

Overview

System interfaces between the ECS and the ASTER GDS provide the means for transferring ASTER data and for sending messages supporting data transfer. Additionally, these interfaces support exchange of information concerning system status, user activity, product pricing, and directory an guide information.

The interfaces between ASTER GDS and ECS can be classified as Electronic via the EBnet and the trans-pacific link which supports the following:

- Verify the system management and scheduling interface between ECS (CSMS and SMC) and ASTER GDS.
- Verify the interface between ECS GSFC DAAC and ASTER GDS ADN DADS for transferring EDSs.

Test Objectives:

- Transfer of expedited data sets from GSFC DAAC to ASTER GDS via FTP PUT.
- Transfer of NOAA NCEP 1-degree ancillary data products from GDAAC to the ASTER GDS.
- Subscription for the ASTER GDS to receive EDS is can be entered at the GDAAC.
- Transfer of EDS Data Notification (EDN) via Email over EBnet from GDAAC to ASTER
- Transfer of EDS Data Request (EDR) from ASTER to GDAAC.
- Automatically transfer of signal file from GDAAC to the FTP server to identify completion of the file transfer.
- E-mail communications between the sites for message exchange, system status and problem reporting.

The specific test cases addressing the interfaces described above are the following:

1. **ICT12.1 GSFC DAAC/ASTER GDS Expedited Data Set Exchange.** This test case verifies that the GSFC DAAC has placed a subscription on the subscription server, on behalf of ASTER GDS, for the EDS. The test case will verify that the Notification and Request formats are as specified in the ECS/ASTER GDS ICD Section 9 and that the email header is as specified. See Page ICT.

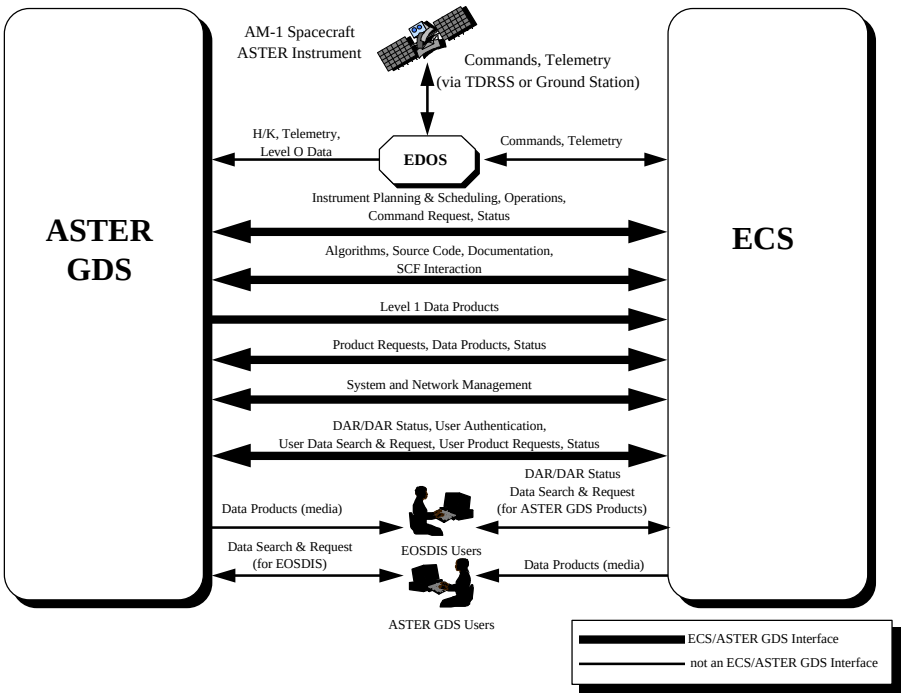

Exhibit ICT12.1 - ECS/ASTER GDS Context Diagram

Test Configuration:

Hardware and software configurations at the ASTER GDS and each ECS site are managed and tracked by the M&O organization at that site. The most current configuration status report will be obtained prior to the start of testing and will be referenced in the test report. Exhibit ICT12.1 depicts the ECS/ASTER GDS Context Diagram. Exhibit ICT12.2 depicts the ECS/ASTER Test Configuration.

The GDAAC-ASTER GDS Interface Confidence Test will verify the interfaces and the requirements specified in the **Interface Requirements Document between Earth Observing System Data and Information System (EOSDIS) Core System (ECS and MITI ASTER GDS Project, document 505-41-18, Change 3 dated 12/22/96????**. All interfaces tested shall be as described in Interface Control Document Between EOSDIS Core System (ECS) and Aster Ground Data System, document 505-41-34 Revision C dated March, 1998, Revision C, including CCR505-41-34-004-F, Appendix A Work-Off Plan, Appendix B ODL Message Keywords (Objects), and Appendix C ASTER - GDS IMS DAR Client API List.

Participants and Support Requirements:

Participants:

- GDAAC M&O personnel
- ASTER DADS M&O
- ASTER AND M&O
- Test Team

Communications:

- Voice: Phone
  SCAMA CNXN to GDS, EDOS
- Data: EBnet circuits at GSIF, Goddard DAAC & GDS **(ASTER—IP Address 210.138.100.129)**

Equipment and Software:

- ECS Release B.0' (EDC and GSFC) DAACs
- SMC Release B.0'
- ASTER GDS ADN Release ?
- ASTER GDS DADS Release ?
- ASTER GDS IMS Release ?
- ASTER GDS SDPS

Test Tools:

TBD

Test Data

Test Data	Description	Source	Location	Test Case Used	Comments
ASTER Level 0 EDSs	Expedited data sets	EDOS	GDAAC	ICT12.1	**Need 1a products from GDS to compare against.**
NCEP Data	GDAS 1-degree ancillary data products from the NOAA NCEP for use in ASTER science processing.	NOAA NCEP	GDAAC	ICT12.2	**Need NCEP Data for ASTER science Processing**

Prerequisites/Workaround:

The following prerequisites should be met before testing begins:

- ECS internal Databases that need to be verified during setup:
  - Data dictionary database
  - Inventory database
  - User registration database
  - DAR user database
  - ASTER GDS User registration database
  - Sybase database
  - Other?

- ESDTs that are needed and location:
  - Level 0 EDSs at GSFC

- The following workarounds are applicable
  - ASTER DPR workaround
  - E-mailed DAR User Profile Changes (B.0')

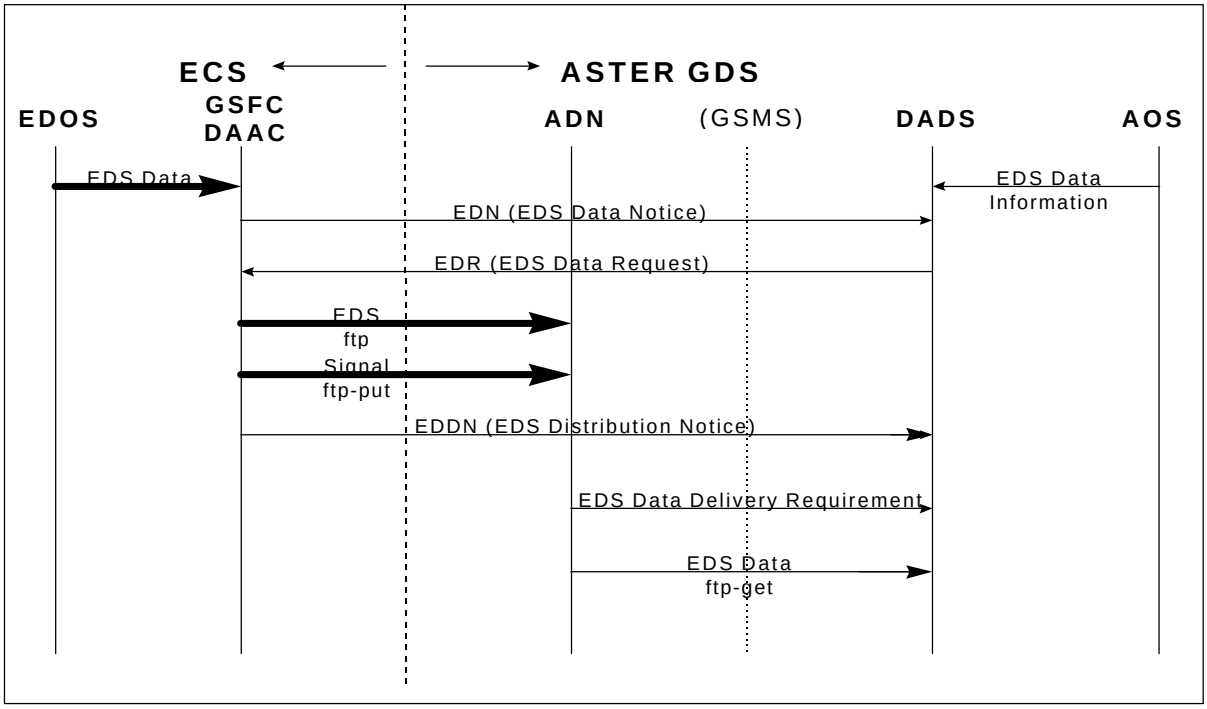

Exhibit ICT12.2 Expedited Data Set Data Flow Diagram

Test Case Descriptions:

ICT12.1 GSFC DAAC/ASTER GDS EDS Exchange

This test verifies that GSFC DAAC operations has the ability to place a subscription to the subscription server, on behalf of the ASTER GDS, once in the beginning of the mission and/or once at a time defined in an Operations Agreement between the ASTER GDS and ECS. Each time the GSFC DAAC receives an EDS from EDOS, the subscription will automatically cause an EDN e-mail message to be sent to the ASTER GDS DADS.

ASTER GDS DADS will have the option of ignoring the data notification or requesting the EDS based upon the Metadata contained in the EDN. This request from ASTER GDS DADS will be a EDS Data Request (EDR).

Requirements to be Verified:

The requirements that will be verified during this test are as follows:

ASTER-0940, DADS2390, EOSD1502, SDPS0100

Test Objectives:

This test verifies the network and system status exchange interfaces between GSFC DAAC and the ASTER GDS. This test verifies Section 9 of document 505-41-34, Interface Control Document Between EOSDIS Core System (ECS) and ASTER Ground Data System and Section 4 of the Ops. Agreement Between GSFC DAAC and the ASTER GDS, dated April 20, 1998. The tests are as follows:

- Verify the exchange of ASTER Expedited L0 from GSFC DAAC to ASTER GDS.
- Subscription for the ASTER GDS to receive EDS is can be entered at the GDAAC.
- Transfer of EDS Data Notification (EDN) via Email over EBnet from GDAAC to ASTER
- Transfer of EDS Data Request (EDR) from ASTER to GDAAC.
- Automatically transfer of signal file from GDAAC to the FTP server to identify completion of the file transfer.

Prerequisite Conditions:

1. GSFC DAAC has placed a subscription on the subscription server, on behalf of the ASTER GDS, as defined by the operations agreement, to notify ASTER GDS of arrival of the expedited data sets to ASTER GDS.

Test Procedures:

Test Setup:

Step ID	Station	Action	Expected Results	Comments	Verified Requirements	Last Modified
1.001	EDOS	Verify that EDOS is up and is in a position to support the test.	EDOS is ready.			
1.002	EDOS	Verify that EDR and ASTER EDS files are available on EDOS for LO ASTER Expedited data.	The files exist in a specified directory on EDOS.			

Test Execution:

Step ID	Station	Action	Expected Results	Comments	Verified Requirements	Last Modified
2001	GSFC DAAC	Login as DAAC operator by entering username and password.	Login is successful.			6/25/98

Step ID	Station	Action	Expected Results	Comments	Verified Requirements	Last Modified
2002	GSFC DAAC, EDOS, ASTER GDS	Verify network connectivity and readiness between The GDAAC, EDOS, and ASTER GDS.	Connectivity established.			6/25/98
2.003	GSFC DAAC	The GDAAC Ops personnel enters a Subscription for ASTER EDS data to notified the ASTER GDS DADS when data becomes available.	Subscription for ASTER EDS is placed.	Verify that GSFC DAAC has a subscription entered on behalf of ASTER GDS for the EDS data. Section 9.2 of the ICD.		6/25/98
2.004	EDOS	EDOS places an Expedited Delivery Record (EDR) containing ASTER EDS files on the identified server.	The EDR containing ASTER EDS files are placed on server.			6/25/98
2.005	GDAAC	GDAAC polls the server for presence of an EDR containing ASTER EDS files.	Detects an EDR in the specified directory.			6/25/98
2.006	GDAAC	GDAAC pulls the EDR containing the ASTER EDS files to the EDOS polling directory at the GDAAC.	The EDR containing the ASTER EDS files is ftp'd to the EDOS polling directory at the GDAAC.			6/25/98
2.007	GSFC DAAC	GDAAC Ingest and Archive ASTER EDS files from the EDOS polling directory.	Ingest and Archive of the ASTER EDS files is successful.	Verify the exchange of ASTER EDS Level 0 data from EDOS to GSFC DAAC per EDOS - ECS ICD.		6/25/98
2.008	GSFC DAAC	Send and EDS Data Notification (EDN) via email over the EBnet to ASTER GDS DADS that new ASTER EDS files are available.	ASTER GDS DADS receives EDN listing EDS files	Verify that with receipt of the EDS from EDOS that a e-mail is sent from GSFC DAAC to ASTER of EDS Data Notification (EDN). Table 9-1 of the ICD.		6/25/98

Step ID	Station	Action	Expected Results	Comments	Verified Requirements	Last Modified
2.009	ASTER GDS	ASTER GDS DADS sends an EDS Data Request (EDR) to GDAAC requesting the EDS files.	GDAAC receives the EDR and the EDS files are transferred successfully.	ECS sends a password to the ASTER ADN FTP Server and commence an FTP PUT to transfer the requested EDS files to the ASTER GDS. Verify that ASTER GDS returns a EDS Data Request (EDR) as per format defined in Table 9-3 of the ICD requesting EDS via file name.		6/25/98
2.010	GSFC DAAC	Automatically transfer a signal file to ASTER ADN FTP server to identify completion of the file transfer.	Signal file is successfully transferred to the ASTER AND FTP server.	Verify that ECS transmits a "signal file" to ASTER GDS. Section 9.4 of the ICD.		6/25/98

Test Termination:

Step ID	Station	Action	Expected Results	Comments	Verified Requirements	Last Modified
3.001	GDAAC	Called ASTER GDS to verify receipt of the EDN.	ASTER acknowledges receipt of EDN.			
3.002	GDAAC	Compare the EDR against the EDS data files to be sure that the file names are the same.	Comparison reveals file names are the same as shown in the EDR against the actual EDS files.			
3.003	GDAAC and ASTER GDS	Verify manually that ASTER GDS has received the EDS files requested and that they are in the format specified.	Receipt of ASTER EDS Files at the ASTER GDS verified and in specified format.			
3.003	GSFC DAAC	Logout of ECS.	Logout is successful.			

ICT12.1 GSFC DAAC Transfer of NOAA NCEP Data to ASTER GDS

NOAA's NCEP, part of the National Weather Service, produces, processes, handles, and distributes meteorological and oceanographic information to users. The GSFC DAAC pulls NCEP ancillary data products daily and makes them available on GDAAC Data Link Server (Larry), larry.gsfc.nasa.gov. This test verifies that GSFC DAAC operations has the ability to place a subscription to the subscription server, on behalf of the ASTER GDS, upon every occurrence GDAS data ingest as defined in the Operations Agreement between the ASTER GDS and ECS. Each time the GSFC DAAC receives NCEP data from GDAAC Data Link Server, the subscription will automatically FTP push the GDAS data to the ASTER GDS DADS.

Requirements to be Verified:

The requirements that will be verified during this test are as follows:

TBD

Test Objectives:

This test verifies the network and system status exchange interfaces between GSFC DAAC and the ASTER GDS. This test verifies Section 4 of the Ops. Agreement Between GSFC DAAC and the ASTER GDS, dated April 20, 1998. The tests are as follows:

- Placing a Subscription request for the ASTER GDS to receive NOAA NCEP ancillary data and that it can be entered at the GDAAC.
- Verify the exchange of NOAA NCEP ancillary data from GSFC DAAC to ASTER GDS.
- Automatically trigger delivery of an Event Notification to the GDS notifying ASTER GDS of data availability.

Prerequisite Conditions:

1. GSFC DAAC has placed a subscription on the subscription server, on behalf of the ASTER GDS, as defined by the operations agreement, to notify ASTER GDS of arrival of the NOAA NCEP ancillary data.

Test Procedures:

Test Setup:

Step ID	Station	Action	Expected Results	Comments	Verified Requirements	Last Modified
1.001	GDAAC Larry Server, GDAAC, ASTER GDS	Verify that GDAAC Larry Server (Larry), GDAAC, and ASTER GDS are up and is in a position to support the test.	Larry, GDAAC, and ASTER GDS up and ready to support the test.			

1.002	GDAAC Larry Server	Verify that NOAA NCEP ancillary files are available on the Larry server.	The files exist in a specified directory on EDOS.			

Test Execution:

Step ID	Station	Action	Expected Results	Comments	Verified Requirements	Last Modified
2001	GSFC DAAC	Login as DAAC operator by entering username and password.	Login is successful.			6/25/98
2002	GSFC DAAC, Larry, ASTER GDS	Verify network connectivity and readiness between The GDAAC, Larry, and ASTER GDS.	Connectivity established.			6/25/98
2.003	GSFC DAAC	The GDAAC Ops personnel enters a Subscription for NOAA NCEP ancillary data to notified the ASTER GDS DADS when data becomes available.	Subscription for NOAA NCEP ancillary data is entered and a copy of the subscription acknowledgment is sent to ASTER GDS.			6/25/98
2.006	GSFC DAAC	GDAAC pulls the NOAA NCEP ancillary data to the specified directory.	The NOAA NCEP ancillary data are pulled over successfully to the specified directory.			6/25/98
2.007	GSFC DAAC	GDAAC Ingest and Archive NOAA NCEP ancillary data.	Ingest and Archive of the NOAA NCEP ancillary data is successful.			6/25/98
2.008	GSFC DAAC	Event Notification automatically triggered and sent to ASTER GDS notifying ASTER of availability of NOAA NCEP ancillary data.	Event Notification is successfully triggered and sent to the ASTER GDS.	The Event Notification is an ECS-generated Email message with format and content defined in Tables 4.3.2-1 and 4.3.2-2 of the GDAAC and ASTER GDS Ops Agreement.		6/25/98
2.009	GSFC DAAC	NOAA NCEP ancillary data automatically transferred (pushed) to the ASTER GDS (Location TBD) immediately following the Event Notification transmittal.	ASTER GDS successfully receives NOAA NCEP ancillary data.			6/25/98
3.001	GSFC DAAC	Call ASTER GDS to verify receipt of NOAA NCEP ancillary data.	ASTER acknowledges receipt of NOAA NCEP ancillary data.			6/25/98

Step ID	Station	Action	Expected Results	Comments	Verified Requirements	Last Modified
3.002	ASTER GDS	Verify size and content of NOAA NCEP ancillary data.	File size and contents are verified.			6/25/98
3.003	GSFC DAAC	Logout of ECS.	Logout is successful.			

Appendix: Test Package Requirements Summary

Requirement	Description	Test Case(s)
ASTER-0940	ECS shall have the capability to send and ASTER GDS shall have the capability to receive Expedited Level 0 and ECS data products, in response to a request from the ASTER GDS.	G-ICT12.1
DADS2390#B	Each DADS shall send to the IPs, at a minimum, the following: a. L0-L4 b. Metadata c. Ancillary data d. Calibration data e. Correlative data f. Documents	G-ICT12.1
EOSD1502#B	ECS elements shall use EBnet for data communications for the following types of data: a. Production data sets (Level 0 data) b. Expedited data sets c. Real-time data (for health and safety) d. Command data e. Data requested from back-up archive f. TDRSS schedule requests g. Data exchange with the FDF h. Production Data Transfers between DAACs i. Management Data exchange with SMC j. Data Products Exchange with ADCs, IPs, and Others	G-ICT12.1
IMS-0280#B	The IMS shall maintain DAR generation information, for example, instrument information received from the ICC and spacecraft information received from the EOC, in a data base which will be accessible during the DAR planning and submittal process.	G-ICT12.1
IMS-0780#B	The IMS shall accept and validate from the ECS users, IPs, ADCs, and ODCs requests for ECS archival data products.	G-ICT12.1
IMS-1070#B	The IMS shall provide the capability for users to construct DARS for collection of ASTER instrument data which shall contain information as listed in the ASTER IRD.	G-ICT12.1
IMS-1130#B	The IMS shall provide descriptive information on instruments and parameters available in Standard Products to help with the creation of data acquisition requests for the ASTER.	G-ICT12.1
IMS-1260#B	The IMS shall be expandable to provide the capability to receive, from the IP Information Management System or an equivalent IP facility, data acquisition request status in accordance with applicable MOUs and provide the status to the data acquisition requester.	G-ICT12.1
IMS-1261	The IMS shall provide the capability to forward data acquisition requests to the ASTER GDS, in accordance with applicable IRDs and ICDs.	G-ICT12.1
SDPS0020#B	The SDPS shall receive EOS science, engineering, ancillary and expedited data from the EDOS and the IPs, and non-EOS data, in situ	G-ICT12.1

Requirement	Description	Test Case(s)
	data, associated algorithms, documentation, correlative data, and ancillary data (as listed in Appendix C) from ADCs, EPDSs, and ODCs.	
SDPS0100#B	The SDPS shall be responsible for delivery of EOS data and data products to the IPs, the ADCs, the ODCs and the other science users via EOSDIS networks and on a variety of physical media.	G-ICT12.1